

WHAT IS CLAIMED IS:

1. An optical unit comprising a plurality of lenses, each of the lenses having a lens surface and an optical axis, and a lens-holding apparatus,

5 the lens-holding apparatus including a plurality of lens frames holding at least one lens respectively, and a lens barrel,

10 the lens frames having portions overlapping with each other in a radial direction orthogonal to the optical axis when the lens frames are arranged adjacent each other along the optical axis,

15 the lens-holding apparatus being provided with a first clearance in the adjacent two lens frames between the overlap portion of one lens frame and the overlap portion of the other lens frame in a radial direction orthogonal to the optical axis,

20 the lens-holding apparatus being provided with a second clearance in the radial direction between the lens surfaces of lenses held by the adjacent two lens frames,

25 the first clearance being smaller than the second clearance, and

the lens frames being arranged in the lens barrel.

2. The optical unit according to claim 1, wherein:

25 the lens-holding apparatus is provided with a third clearance along the optical axis between the lens surfaces of lenses held by the adjacent two lens frames,

in the two adjacent lenses, the lens surface of one lens is a positive power, and that of the other lens is a negative

power, and

when the third clearance is 0.5 mm or less, the following relationship is established:

$$0.58 < R_p/R_n < 1.65,$$

5 where R_p represents a radius of curvature of the lens surface of the positive power, and R_n represents a radius of curvature of the lens surface of the negative power.

10 3. The optical unit according to claim 2, wherein the optical unit is a microscope objective lens.